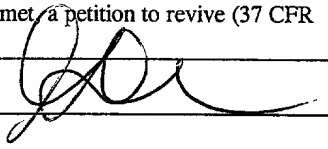


FORM PTO-1390 (Modified) (REV 5-93)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				016782-0230	
				U.S. APPLICATION NO. (if known) (see 37 C.F.R. 1.53) To be assigned 097857600	
INTERNATIONAL APPLICATION NO. PCT/EP99/09718		INTERNATIONAL FILING DATE 09 December 1999		PRIORITY DATE CLAIMED 15 December 1998	
TITLE OF INVENTION STEEL WIRE WITH BRIGHT LOOKING SURFACE					
APPLICANT(S) FOR DO/EO/US Ludo ADRIAENSEN, Alain LEPLAE, Gerard VANDEWALLE and Gilbert VAN LOO.					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
1.	<input checked="" type="checkbox"/>	This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.			
2.	<input type="checkbox"/>	This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.			
3.	<input type="checkbox"/>	This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).			
4.	<input checked="" type="checkbox"/>	A proper Demand for International Preliminary Examination was made by the 19 th month from the earliest claimed priority date.			
5.	<input checked="" type="checkbox"/>	A copy of the International Application as filed (35 U.S.C. 371(c)(2))			
	<input type="checkbox"/>	is transmitted herewith (required only if not transmitted by the International Bureau).			
	<input checked="" type="checkbox"/>	has been transmitted by the International Bureau.			
	<input type="checkbox"/>	is not required, as the application was filed in the United States Receiving Office (RO/US)			
6.	<input type="checkbox"/>	A translation of the International Application into English (35 U.S.C. 371(c)(2)).			
7.	<input checked="" type="checkbox"/>	Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))			
	<input type="checkbox"/>	are transmitted herewith (required only if not transmitted by the International Bureau).			
	<input type="checkbox"/>	have been transmitted by the International Bureau.			
	<input type="checkbox"/>	have not been made; however, the time limit for making such amendments has NOT expired.			
	<input checked="" type="checkbox"/>	have not been made and will not be made.			
8.	<input type="checkbox"/>	A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).			
9.	<input type="checkbox"/>	An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).			
10.	<input checked="" type="checkbox"/>	Annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).			
11.	<input type="checkbox"/>	Applicant claims small entity status under 37 CFR 1.27.			
Items 12. to 17. below concern other document(s) or information included:					
12.	<input type="checkbox"/>	An Information Disclosure Statement under 37 CFR 1.97 and 1.98.			
13.	<input type="checkbox"/>	An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.			
14.	<input checked="" type="checkbox"/>	A FIRST preliminary amendment.			
	<input type="checkbox"/>	A SECOND or SUBSEQUENT preliminary amendment.			
15.	<input type="checkbox"/>	A substitute specification.			
16.	<input type="checkbox"/>	A change of power of attorney and/or address letter.			
17.	<input type="checkbox"/>	Other items or information:			

U.S. APPLICATION NO. 09/857600 To be assigned		INTERNATIONAL APPLICATION NO PCT/EP99/09718		ATTORNEY'S DOCKET NUMBER 016782-0230	
18. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATION	
Basic National Fee (37 CFR 1.492(a)(1)-(5): Search Report has been prepared by the EPO or JPO \$860.00					
International preliminary examination fee paid to USPTO (37 CFR 1.482) \$690.00					
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) \$710.00					
Neither international preliminary examination fee (37 CFR 1.482) nor International search fee (37 CFR 1.445(a)(2)) paid to USPTO \$1,000.00					
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) \$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than 20 Months from the earliest claimed priority date (37 CFR 1.492(e))				\$130.00	
Claims	Number Filed	Included in Basic Fee	Extra Claims	Rate	
Total Claims	12	-	20	= 0	\$18.00
Independent Claims	2	-	3	= 0	\$80.00
Multiple dependent claim(s) (if applicable)				\$270.00	
TOTAL OF ABOVE CALCULATIONS =				\$990.00	
Reduction by 1/2 for filing by small entity, if applicable.				\$0.00	
SUBTOTAL =				\$990.00	
Processing fee of \$130.00 for furnishing English translation later the 20 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	
TOTAL NATIONAL FEE =				\$990.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+	
TOTAL FEES ENCLOSED =				\$990.00	
				Amount to be: refunded \$	
				charged \$	
a. <input checked="" type="checkbox"/> A check in the amount of \$990.00 to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. <u>19-0741</u> in the amount of \$0.00 to the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>19-0741</u> . A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Foley & Lardner Washington Harbour 3000 K Street, N.W., Suite 500 Washington, D.C. 20007-5109					
<div style="text-align: right;">  SIGNATURE NAME GLENN LAW REGISTRATION NUMBER 34,371 </div>					

Atty. Dkt. No. 016782-0230

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ludo ADRIAENSEN, et al.
Title: STEEL WIRE WITH BRIGHT LOOKING SURFACE
Appl. No.: To be assigned
Filing Date: June 8, 2001
Examiner: Unassigned
Art Unit: Unassigned

PRELIMINARY AMENDMENT

Commissioner for Patents
Box PATENT APPLICATION
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application, Applicants respectfully request that the following amendments be entered into the application:

IN THE CLAIMS:

Please note that these claim amendments assume entry of the annexes to the International Preliminary Examination Report.

Please amend Claims 3, 5, 6, 7, 10, 11 and 12 as follows:

3. (Amended) A steel wire according to claim 1, wherein said polymer is a thermoplastic polyester selected from the group consisting of polyethylene terephthalate, polybutylene terephthalate and polyethylene naphthenate.
5. (Amended) A steel wire according to claim 1, wherein said coloring agent is organic.
6. (Amended) A steel wire according to claim 1, wherein said intermediate coating is a metallic coating such as a copper coating, a copper alloy coating, a zinc

coating, a zinc alloy coating, a nickel coating, a nickel alloy, a tin coating or a tin alloy coating.

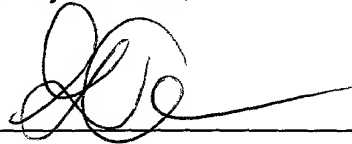
7. (Amended) A steel wire according to claim 1, wherein said intermediate coating is a coating such as a cooper-tin sulfate coating or a copper-sulfate coating.
10. (Amended) A method according to claim 8, said method further comprising the step of coloring said polymer.
11. (Amended) A method according to claim 8, wherein said giving of a degree of brightness to said intermediate coating is done by wet drawing the coated steel wire.
12. (Amended) A method according to claim 8, wherein said further coating with a polymer is done by an extrusion process.

REMARKS

Applicants respectfully request that the foregoing amendments to the claims be entered in order to avoid this application incurring a surcharge for the presence of one or more multiple dependent claims.

Respectfully submitted,

By



Date June 8, 2001

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
Telephone: (202) 672-5414
Facsimile: (202) 672-5399

Glenn Law
Attorney for Applicant
Registration No. 34,371

0957600-091001
TODD-00945260

MARKED UP VERSION OF CLAIMS:

3. (Amended) A steel wire according to **[any one of the preceding claims]** **claim 1**, wherein said polymer is a thermoplastic polyester selected from the group consisting of polyethylene terephthalate, polybutylene terephthalate and polyethylene naphthenate.
5. (Amended) A steel wire according to **[any one of the preceding claims]** **claim 1**, wherein said coloring agent is organic.
6. (Amended) A steel wire according to **[any one of the preceding claims]** **claim 1**, wherein said intermediate coating is a metallic coating such as a copper coating, a copper alloy coating, a zinc coating, a zinc alloy coating, a nickel coating, a nickel alloy, a tin coating or a tin alloy coating.
7. (Amended) A steel wire according to **[any one of claims 1 to 5]** **claim 1**, wherein said intermediate coating is a coating such as a copper-tin sulfate coating or a copper-sulfate coating.
10. (Amended) A method according to claim 8 **[or 9]**, said method further comprising the step of coloring said polymer.
11. (Amended) A method according to **[any one of claims 8 to 10]** **claim 8**, wherein said giving of a degree of brightness to said intermediate coating is done by wet drawing the coated steel wire.
12. (Amended) A method according to **[any one of claims 8 to 10]** **claim 8**, wherein said further coating with a polymer is done by an extrusion process.

ART 1000000

-1-

STEEL WIRE WITH BRIGHT LOOKING SURFACEField of the invention.

5 The present invention relates to a coated steel wire having a bright looking colored surface and to a method of manufacturing a coated steel wire having a bright looking colored surface.

Background of the invention.

10 A number of attempts have already been made to give to a steel wire a bright looking surface and to maintain an acceptable level of brightness during the life of the wire. All of these attempts, however, have some major disadvantages.

15 One of these attempts has consisted in galvanizing a steel wire and enameling the galvanized steel wire so that a lacquered wire is obtained. Such a lacquered wire has the advantage of having an excellent corrosion resistance due to the duplex layer "zinc + lacquer" and the advantage of offering a variety of colors. Experience, however, has shown that for applications where the wire is subjected to high
20 mechanical deformations, the lacquer does not stick on the surface of the wire due to its inherent lack of tenacity. Still another problem is the relatively high coefficient of friction of lacquer coatings. This considerably slows down the speed of the downstream processing of the lacquered steel wire.

25

Summary of the invention.

It is an object of the present invention to provide a corrosion resistant steel wire with a bright, preferably colored surface.

30 It is another object of the present invention to provide a steel wire with a typical metallic looking color.

It is also an object of the present invention to provide a steel wire with transparent colored coating which conserves its transparency.

US-A-4358887 discloses a pipe, hot dipped with zinc and plastic coated with polyester. Between the zinc coating and the polyester coating is a chromate compound.

EP-A-0791453 discloses a galvanized strip. On the zinc coating is a bonding layer and on the bonding layer is a polymer coating such as a polyester coating with a dye.

AMENDED SHEET

-2-

It is still another object of the present invention to provide an adherent coating to a bright steel wire without much decreasing the original degree of brightness of the steel wire.

5 It is yet another object of the present invention to provide an environment friendly method of giving a bright metallic looking color to a steel wire.

According to a first aspect of the present invention, there is provided a steel wire with a bright looking and ~~preferably~~ colored surface. The steel wire is covered with an intermediate coating layer which gives the
10 brightness to the steel wire and is ^{immediately} further coated with a ^a polymer being selected from the group consisting of thermoplastic polyester*, polyimides, polyamides, polycarbonates, crystalline polyvinylchlorides and polyphthalamides. This ^{polyester} polymer is transparent. The ^{polyester} polymer is ~~preferably~~ colored, e.g. by comprising a transparent coloring agent,
15 which can be added to the ^{polyester} polymer in the form of small grains in a carrier of a similar or same ^{polyester} polymer. The coloring agent may be organic. An immediate advantage is that a variety of embodiments are possible depending upon the concentration and type of coloring agent. Metallic like colors and fluorescent colors may be applied to the steel wire in this
20 way.

In comparison with a lacquer coating, these transparent ^{polyesters} polymers are more tenacious and have a lower coefficient of friction. A friction force test demonstrates that ~~a nylon coating or a polyethylene terephthalate~~
25 coating provides a friction resistance which is three times smaller than the friction resistance of a zinc coating.

~~The group of polyimides comprises polyamide imide, polyester imide, polyether imide and polyanhydride. Polyamide imide, as a matter of~~
30 example, provides a good adhesion and has a high melting point.

-3-

Preferably the coating is a thermoplastic polyester such as polyethylene terephthalate ("PET"), polybutylene terephthalate ("PBT") and polyethylene naphthenate ("PEN").

5 The most preferable embodiment amongst these is polyethylene terephthalate, since it combines the better properties such as high tenacity, low humidity absorption with a relatively low cost.

10 Within the context of the present invention, the terms "polyethylene terephthalate" or "PET" denote not only homopolymers of ethylene terephthalate but also copolymers of ethylene terephthalate containing not more than 20% of other copolymerized units, e.g. derived from other acids than terephthalic acid, such as isophthalic acid or from other glycols than ethylene glycol. The polymer may also contain mixtures of polymers in order to modify certain of the properties thereof.

15 The polyethylene terephthalate coating is more than 50% amorphous, and preferably more than 70% amorphous. This may be achieved by rapid cooling after the extrusion process. In comparison with a crystalline structure of the coating, an amorphous polyethylene terephthalate coating, for example, has a more pronounced luster and is more flexible. Recrystallisation, however, may occur in course of time. In comparison with a PBT coating, recrystallisation happens much slower with a polyethylene terephthalate coating. This is an advantage for a polyethylene terephthalate coating over PBT coating.

25 In comparison with coatings of polyamides such as nylon-6 (PA6), a polyethylene terephthalate coating has a better adhesion and adhesion retention, has a higher corrosion resistance, has a better resistance against ultra-violet light (= better weatherability) and has a lower absorption of water or moisture, and, as a consequence, maintains much better its original degree of transparency and luster. More particularly, polyethylene terephthalate coating absorbs only one tenth of the amount

30

-4-

of moisture absorbed by a nylon-6 coating in the same circumstances.
Moreover, application of a polyethylene terephthalate coating can be done
in an environment-friendly way, i.e. with a much more simpler pre-
treatment without the use of chromic acids which would otherwise
5 decrease the degree of brightness and without the use of primers which
could also jeopardize the original degree of brightness.

One way of giving the original brightness to the steel wire is by applying
an intermediate metallic coating such as a copper coating, a copper alloy
10 coating such as bronze or brass, a zinc coating, a zinc alloy coating such
as a 95% zinc 5% aluminum alloy, a nickel coating, a nickel alloy
coating, a tin coating, or a tin alloy coating.

Another way of giving the original brightness to the steel wire is by
15 applying an intermediate coating such as a copper-tin sulfate coating or
a copper-sulfate coating.

The degree of brightness of the steel wire can be quantified on the bright
intermediate coating of the steel wire, either before coating with the
20 transparent polymer, or after removal of the transparent polymer. This
quantification has the advantage of being independent of the color of the
polymer and of the thickness of the polymer. The degree of brightness
of the steel wire can also be quantified on the final steel wire, i.e. coated
with the transparent polymer, but may have the disadvantage of being
25 dependent upon the color of the polymer, if any, and upon the thickness
of the polymer.

The quantification can be done either by determining the peripheral
roughness of the steel wire or by determining the so-called L-value of the
steel wire.

30

-5-

According to a second aspect of the present invention, there is provided a method of manufacturing a steel wire having a bright looking colored surface. The method comprises the following steps :

- (a) providing a steel wire ;
- 5 (b) coating the steel wire with an intermediate coating layer ;
- (c) giving a degree of brightness to the intermediate coating ;
- (d) coloring a polymer e.g. by adding a coloring agent to the polymer, where the polymer is selected from the group consisting of thermoplastic polyesters, polyimides, polyamides, polycarbonates and
- 10 polyphthalamides;
- (e) further coating the bright steel wire with the polymer (16).

The coating of the steel wire with the intermediate coating layer can be done by means of a hot dip operation, or by means of an electrolytic

15 coating process.

A required degree of brightness can be given to the intermediate coating layer by wet drawing the intermediately coated steel wire in a suitable lubricant.

20 However, wet drawing is not necessary to obtain the required degree of brightness. This required degree of brightness can also be obtained on the steel wire on its final diameter by suitably cooling the wire immediately after it leaves the bath in a hot dip galvanizing operation, or by electroplating the steel wire.

25 The further coating with a transparent polymer can be done by means of an extrusion process.

30 The invention is particularly applicable to steel wires which are subjected to high mechanical deformations.

For low carbon steel wire, which is steel wire with a carbon content below 0.20 %, following types of wires are subjected to high mechanical

deformations : bookbinding wire, box stapling wire, weaving wire, mattress wire, paper clip wire, coat hanger wire, bucket wire, tie wire, lamp shade wire, decoration wire, braiding wire, stitching wire ...

5 A typical diameter range for bookbinding wire is from 0.60 mm to 1.80 mm.

For high carbon steel wire, which is steel wire with a carbon content above 0.25 %, a spoke wire may be subjected to high mechanical deformation. A spoke wire coated according to the invention and having a fluorescent color may be particularly advantageous with respect to security.

Brief description of the drawings.

The invention will now be described into more detail with reference to the accompanying drawing being

15 - FIGURE 1, which shows a transversal cross-section of a steel wire according to the invention.

Description of a preferred embodiment of the invention.

FIGURE 1 represents a transversal cross-section of a steel wire 10 according to the invention. The steel wire 10 comprises a steel core 12, a thin coating 14 of wet drawn zinc so that a bright appearance is obtained and an outer coating 16 of transparent polyethelene terephthalate. The coating 16 of polyethelene terephthalate comprises a transparent organic coloring agent which gives to the steel wire 10 a bright and metallic like appearance.

Such a steel wire according to the invention can be manufactured as follows.

Starting material is a low carbon wire rod with a diameter of about 5.5 mm. This wire rod is dry drawn until an intermediate diameter of 3.0 mm. The thus drawn steel wire is subjected to heat treatment and is hot dip galvanized at this intermediate diameter of 3.0 mm. The galvanized

ART 34 AMEND

-7-

5 steel wire is now wet drawn in a soap solution until a final diameter of 1.2 mm. This wet drawing gives the galvanized steel wire its bright appearance. The drawn steel wire is degreased in order to remove all remaining drawing lubricants from the surface of the steel wire. Finally, a transparant polyethylene tere^ephthalate coating with transparent organic coloring agents is applied to the steel wire. The thickness of the polyethylene tere^ephthalate is coating is about 35 micrometer (35 μ m). Conveniently, these thicknesses range from 10 μ m to 200 μ m, preferably from 25 μ m to 50 μ m. Typical values are 35 μ m for bookbinding wire and 50 μ m for spoke wire.

10

The thus obtained invention steel wire is suitable for use as a bookbinding wire. The polyethylene tere^ephthalate coating adheres well to the steel wire and can withstand the mechanical deformations to which a wires such as a bookbinding wire are normally subjected.

15

-8-

CLAIMS

1. A coated steel wire (10) having a bright looking surface,
 said steel wire (10) having a steel core (12),
 5 said steel core (12) being covered with an intermediate coating layer
 (14),
~~said steel wire being further coated with a polymer (16) being~~
~~selected from the group consisting of thermoplastic polyester,~~
~~polyimides, polyamides, polyphthalamides, crystalline~~
 10 ~~polyvinylchlorides and polycarbonates,~~
~~said polymer being transparent.~~ *and immediately thereupon with*
~~polyester~~ *and being colored.*
- ~~2. A steel wire according to claim 1, wherein said polymer is colored.~~
- 15 ~~2~~ *3* A steel wire according to claim 1, said polymer comprising a
 transparent coloring agent.
- 20 ~~3~~ *4* A steel wire according to any one of the preceding claims,
 wherein said polymer is a thermoplastic polyester selected from the
 group consisting of polyethylene terephthalate, polybutylene
 terephthalate and polyethylene naphthenate.
- 25 ~~4~~ *5* A steel wire according to claim ~~3~~,
 wherein said thermoplastic polyester is polyethylene terephthalate.
- ~~5~~ *6* A steel wire according to any one of the preceding claims,
 wherein said coloring agent is organic.
- 30 ~~6~~ *7* A steel wire according to any one of the preceding claims,
 wherein said intermediate coating is a metallic coating such as a
 copper coating, a copper alloy coating, a zinc coating, a zinc alloy
 coating, a nickel coating, a nickel alloy, a tin coating or a tin alloy

coating.

- 7 ~~8~~. A steel wire according to any one of claims 1 to ⁵~~8~~,
 wherein said intermediate coating is a coating such as a copper-tin
 sulfate coating or a copper-sulfate coating.
- 8 ~~9~~. A method of manufacturing a coated steel wire (10) having a bright
 looking colored surface, said method comprising the following
 steps :
 (a) providing a steel core (12) ;
 (b) coating said steel core (12) with an intermediate coating layer
 (14) ;
 (c) giving a degree of brightness to said intermediate coating (14) ;
 (d) using a transparent polymer (16), said polymer being selected
~~from the group consisting of thermoplastic polyester, polyimides,~~
~~polyamides, polyphthalamides and polycarbonates ;~~
 (e) further coating said bright steel wire with said polymer (16).
polyester
- 9 ~~10~~. A method according to claim ⁸~~9~~,
 wherein said coating with said intermediate coating layer is done by
 means of a hot dip operation.
- 10 ~~11~~. A method according to claim ⁸~~9~~ or ⁹~~10~~,
 said method further comprising the step of coloring said polymer.
- 11 ~~12~~. A method according to any one of claims ⁸~~9~~ to ¹⁰~~11~~,
 wherein said giving of a degree of brightness to said intermediate
 coating is done by wet drawing the coated steel wire.
- 12 ~~13~~. A method according to any one of claims ⁸~~9~~ to ¹⁰~~11~~,
 wherein said further coating with a polymer is done by an extrusion

ART

-10-

5

[illegible]

1/1

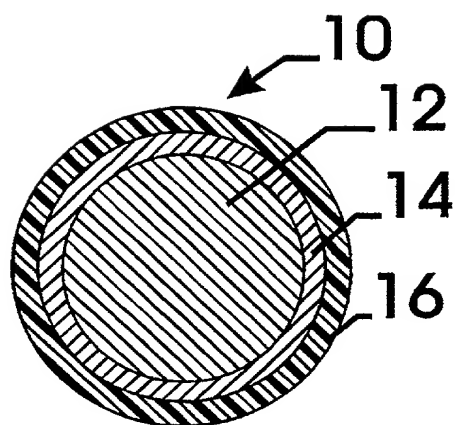


Fig. 1

097857600-09718

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I HEREBY DECLARE:

THAT my residence, post office address, and citizenship are as stated below next to my name;

THAT I believe I am the original, first, and sole inventor (if only one inventor is named below) or an original, first, and joint inventor (if plural inventors are named below or in an attached Declaration) of the subject matter which is claimed and for which a patent is sought on the invention entitled

STEEL WIRE WITH BRIGHT LOOKING SURFACE

(Attorney Docket No. 016782-0230)

the specification of which (check one)

 is attached hereto.

XX was filed on June 8, 2001 as United States Application Number 09/857,600 and was amended on June 8, 2001.

THAT I do not know and do not believe that the same invention was ever known or used by others in the United States of America, or was patented or described in any printed publication in any country, before I (we) invented it;

THAT I do not know and do not believe that the same invention was patented or described in any printed publication in any country, or in public use or on sale in the United States of America, for more than one year prior to the filing date of this United States application;

THAT I do not know and do not believe that the same invention was first patented or made the subject of an inventor's certificate that issued in any country foreign to the United States of America before the filing date of this United States application if the foreign application was filed by me (us), or by my (our) legal representatives or assigns, more than twelve months (six months for design patents) prior to the filing date of this United States application;

THAT I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment specifically referred to above;

THAT I believe that the above-identified specification contains a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention, and sets forth the best mode contemplated by me of carrying out the invention; and

THAT I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I HEREBY CLAIM foreign priority benefits under Title 35, United States Code §119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number	Country	Foreign Filing Date	Priority Claimed?	Certified Copy Attached?
98204259.0	EUROPE	15 December 1998	YES	

I HEREBY CLAIM the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

U.S. Provisional Application Number	Filing Date

I HEREBY CLAIM the benefit under Title 35, United States Code, §120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Application Number	Parent Filing Date	Parent Patent Number

I HEREBY APPOINT the following registered attorneys and agents of the law firm of
FOLEY & LARDNER:

STEPHEN A. BENT	Reg. No. <u>29,768</u>
DAVID A. BLUMENTHAL	Reg. No. <u>26,257</u>
BETH A. BURROUS	Reg. No. <u>35,087</u>
ALAN I. CANTOR	Reg. No. <u>28,163</u>
WILLIAM T. ELLIS	Reg. No. <u>26,874</u>
JOHN J. FELDHAUS	Reg. No. <u>28,822</u>
MICHAEL D. KAMINSKI	Reg. No. <u>32,904</u>
LYLE K. KIMMS	Reg. No. <u>34,079</u>
KENNETH E. KROSIN	Reg. No. <u>25,735</u>
JOHNNY A. KUMAR	Reg. No. <u>34,649</u>
JACK LAHR	Reg. No. <u>19,621</u>
GLENN LAW	Reg. No. <u>34,371</u>
PETER G. MACK	Reg. No. <u>26,001</u>
STEPHEN B. MAEBIUS	Reg. No. <u>35,264</u>
BRIAN J. MC NAMARA	Reg. No. <u>32,789</u>
SYBIL MELOY	Reg. No. <u>22,749</u>
RICHARD C. PEET	Reg. No. <u>35,792</u>
GEORGE E. QUILLIN	Reg. No. <u>32,792</u>
ANDREW E. RAWLINS	Reg. No. <u>34,702</u>
BERNHARD D. SAXE	Reg. No. <u>28,665</u>
CHARLES F. SCHILL	Reg. No. <u>27,590</u>
RICHARD L. SCHWAAB	Reg. No. <u>25,479</u>
MICHELE M. SIMKIN	Reg. No. <u>34,717</u>
HAROLD C. WEGNER	Reg. No. <u>25,258</u>

to have full power to prosecute this application and any continuations, divisions, reissues, and reexaminations thereof, to receive the patent, and to transact all business in the United States Patent and Trademark Office connected therewith.

I request that all correspondence be directed to:

Glenn Law
FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109

Telephone: (202) 672-5426
 Facsimile: (202) 672-5399

I UNDERSTAND AND AGREE THAT the foregoing attorneys and agents appointed by me to prosecute this application do not personally represent me or my legal interests, but instead represent the interests of the legal owner(s) of the invention described in this application.

I FURTHER DECLARE THAT all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these

statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

1-00
 Name of first inventor Ludo ADRIAENSEN
 Residence Deerlijk, Belgium BEX
 Citizenship Belgium
 Post Office Address Bottenhoek 14
8540 Deerlijk, Belgium
 Inventor's signature [Signature]
 Date 27.08.01

2-00
 Name of second inventor Alain LEPLAE
 Residence Moorsele, Belgium BEX
 Citizenship Belgium
 Post Office Address 't Vrije 69
8560 Moorsele, Belgium
 Inventor's signature [Signature]
 Date 28/08/01

3-00
 Name of third inventor Gerard VANDEWALLE
 Residence Deerlijk, Belgium BEX
 Citizenship Belgium
 Post Office Address Oliebergstraat 46
8540 Deerlijk, Belgium
 Inventor's signature [Signature]
 Date 27/08/2001

4-00
 Name of fourth inventor Gilbert VAN LOO
 Residence Harelbeke, Belgium BEX
 Citizenship Belgium
 Post Office Address Vlamingenstraat 9
8530 Harelbeke, Belgium
 Inventor's signature [Signature]
 Date 29/08/01